

IN THE CLAIM

Please amend the claims as follows:

1. (original) Method for controlling a disc drive apparatus (1),  
the disc drive apparatus (1) comprising:

scanning means (30) for scanning a record track of a disc (2),  
said scanning means (30) comprising at least one read/write  
element (34) to be positioned with respect to the disc (2),  
and at least one detector (35) for generating a read signal  
(S<sub>R</sub>) ;

actuator means (50) for controlling the positioning of said at  
least one read/write element (34) ;

a control circuit (290) for receiving said read signal (S<sub>R</sub>)  
and generating at least one actuator control signal (S<sub>CR</sub>) on  
the basis of at least one signal component of said read signal  
(S<sub>R</sub>), the control circuit (290) having at least one variable  
gain ( $\gamma$ ) ;

said control circuit (290), said actuator means (50), said  
read/write element (34), and said detector (35) defining a  
control loop (200) having a critical frequency ( $\omega_{CP}$ ) ;

the method comprising the steps of:

for signal components having a frequency in a predefined range

corresponding to said critical frequency ( $\omega_{CP}$ ), selectively setting the gain ( $\gamma$ ) to a value lower than a value for signal components having a frequency outside said range.

2. (original) Method according to claim 1, wherein said gain ( $\gamma$ ) has a constant value ( $\gamma_C$ ) for signal components having a magnitude below a predefined shock threshold ( $R_T$ ) ;  
wherein, for signal components having a magnitude above said predefined shock threshold ( $R_T$ ), said gain ( $\gamma$ ) is increased by a variable value ( $\gamma_V$ ) ;  
wherein said gain increase ( $\gamma_V$ ) is lower for signal components having a frequency inside said predefined range as compared to the gain increase ( $\gamma_V$ ) for signal components having a frequency outside said range.

3. (original) Method according to claim 2, wherein said constant value ( $\gamma_C$ ) corresponds to a linear control design.

4. (original) Method according to claim 1, comprising the steps of:  
receiving said read signal ( $S_R$ ) ;  
dynamically filtering said read signal ( $S_R$ ) ;

applying a first gain ( $\gamma_c$ ) to filtered signal components having a magnitude below a predefined shock threshold ( $R_T$ ), and applying a second gain ( $\gamma_c + \gamma_v$ ) higher than said first gain ( $\gamma_c$ ) to filtered signal components having a magnitude above said predefined shock threshold ( $R_T$ ).

5. (original) Method according to claim 4, wherein the step of dynamically filtering comprises the step of selectively suppressing signal components having a frequency in the proximity of said critical frequency ( $\omega_{CP}$ ).

6. (original) Method according to claim 4, wherein said gain increase ( $\gamma_v$ ) is proportional to the magnitude of the corresponding filtered signal components.

7. (original) Method according to claim 1, wherein said actuator means (50) comprises a radial actuator (51), and wherein said variable gain ( $\gamma$ ) is a gain in the radial control loop for controlling said radial actuator (51).

8. (original) Method according to claim 1, wherein said actuator means (50) comprises a focal actuator (52), and wherein said

variable gain ( $\gamma$ ) is a gain in the focal control loop for controlling said focal actuator (52).

9. (original) Method according to claim 1, wherein said actuator means (50) comprises a tilt actuator (53), and wherein said variable gain ( $\gamma$ ) is a gain in the tilt control loop for controlling said tilt actuator (53).

10. (original) Control circuit (290) for use in a disc drive apparatus (1), comprising:

an input (91) for receiving a read signal ( $S_R$ ) from a detector (35);

at least one output (93) for providing at least one actuator control signal ( $S_{CR}$ ) on the basis of at least one signal component (REn) of said read signal ( $S_R$ );

the control circuit (290) having a variable gain ( $\gamma$ );

the control circuit (290) being adapted to set its gain ( $\gamma$ ) depending on whether or not shocks are experienced, and/or depending on the magnitude of shocks;

the control circuit (290) comprising a dynamic filter (297) which attenuates signal components having a frequency within a predefined frequency range.

11. (original) Control circuit according to claim 10, wherein the said dynamic filter (297) comprises a notch filter.

12. (original) Control circuit according to claim 10, wherein the said dynamic filter (297) comprises a low-pass filter.

13. (original) Control circuit according to claim 10, comprising a variable amplifier (299) which comprises:

a constant amplifier part (299A) providing a constant gain ( $\gamma_c$ ) ;  
and

a variable amplifier part (299B) providing a variable gain ( $\gamma_v$ ) ;  
wherein said dynamic filter (297) is arranged at the input of said variable amplifier part (299B).

14. (original) Disc drive apparatus (1) comprising:

scanning means (30) for scanning a record track of a disc (2), said scanning means (30) comprising at least one read/write element (34) to be positioned with respect to the disc (2), and at least one detector (35) for generating a read signal ( $S_R$ ) ;

actuator means (50) for controlling the positioning of said at least one read/write element (34) ;

a control circuit (290) for receiving said read signal ( $S_R$ ) and generating at least one actuator control signal ( $S_{CR}$ ) on the basis

of at least one signal component of said read signal ( $S_R$ ), the control circuit (290) having at least one variable gain ( $\gamma$ ); said control circuit (290), said actuator means (50), said read/write element (34), and said detector (35) defining a control loop (200) having a critical frequency ( $\omega_{CP}$ ); the control circuit (290) being adapted to perform the method of claim 1.

15. (original) Disc drive apparatus (1) comprising:  
scanning means (30) for scanning a record track of a disc (2), said scanning means (30) comprising at least one read/write element (34) to be positioned with respect to the disc (2), and at least one detector (35) for generating a read signal ( $S_R$ );  
actuator means (50) for controlling the positioning of said at least one read/write element (34);  
a control circuit (290) according to claim 10 for receiving said read signal ( $S_R$ ) and generating at least one actuator control signal ( $S_{CR}$ ) on the basis of at least one signal component of said read signal ( $S_R$ ), the control circuit (290) having at least one variable gain ( $\gamma$ );  
said control circuit (290), said actuator means (50), said

read/write element (34), and said detector (35) defining a control loop (200) having a critical frequency ( $\omega_{CP}$ ) .

16. (original) Disc drive apparatus according to claim 15, wherein said predefined frequency range of said dynamic filter (297) corresponds to said critical frequency ( $\omega_{CP}$ ) of said control loop (200) .

17. (currently amended) Disc drive apparatus according to claim 14-~~or 15~~, wherein said actuator means (50) is designed for controlling a radial position of said at least one read/write element (34) and/or for controlling an axial position of said at least one read/write element (34) and/or for controlling an tilt position of said at least one read/write element (34) .

18. (currently amended) Disc drive apparatus according to claim 14-~~or 15~~, wherein said detector (35) comprises an optical detector.